

Q1) Consider the system shown in Figure 1. Find the value of K and p so that the closed loop system has a 5% Setting Time equal to 4 seconds and a damping ratio equal to 0.2 [8 marks]

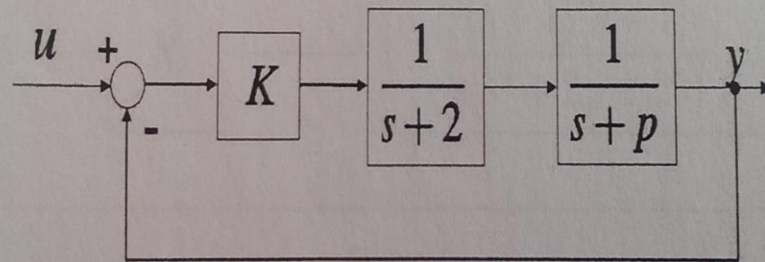


Figure 1

Q2) Find the value of K in the system of Figure 2 that will lead to a stable output response [6 marks]

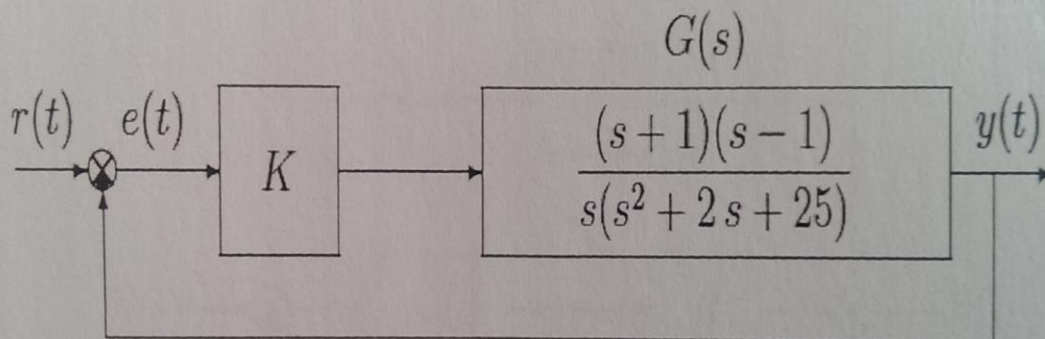


Figure 2

Q3) For the system shown in Figure 3, find the transfer function $Y(s)/X(s)$ [4 marks]

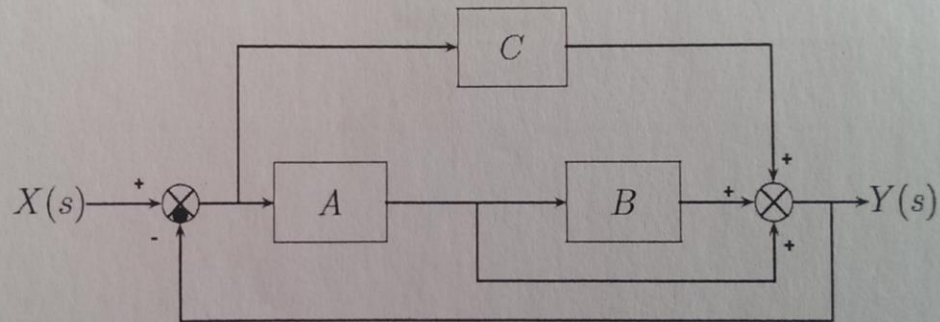


Figure 3

Q4) The step response of a RC circuit to a step input of size 4 is shown in Figure 4. Determine the transfer function of the system [2 marks]

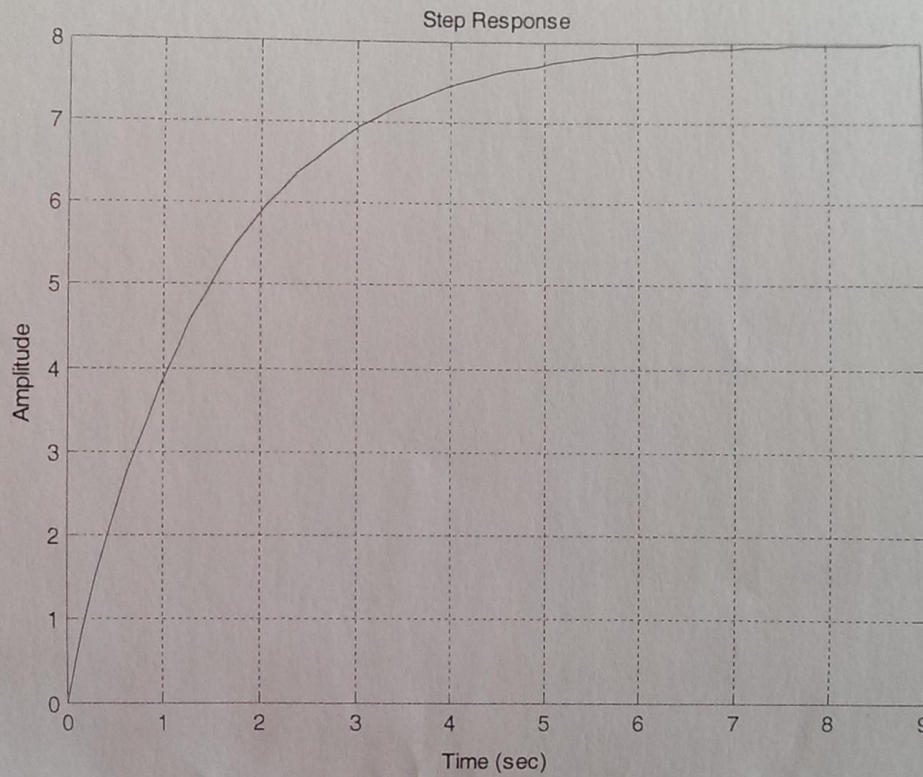


Figure 4